

REMARKS

Claims 1, 2, 4, 6, 8-10, 12, 14, 16, and 41-44 are pending. Claims 17-40 have been cancelled. Reconsideration and allowance are respectfully requested in light of the above amendments and the following remarks.

Claim Rejections under 35 U.S.C. §102(b)

Claims 1, 2, 6, 8-10, 14, 16, 41-43, and 44 stand rejected under 35 U.S.C. §103(a) in view of U.S. Patent No. 5,191,819 to Hoshi ("Hoshi"), U.S. Patent No. 4,251,198 to Altenberg ("Altenberg") and U.S. Patent No. 5,947,805 to Van Osenbruggen ("Van Osenbruggen"). Insofar as they may be applied against the Claims, these rejections have been overcome.

Claims 1 and 9, as now amended, more particularly recite one of the distinguishing characteristics of the present invention, namely, brazing one end of a plurality to a holder while the other end is free-floating (where the majority of the length extends beyond the periphery of the holder). Support for these amendments can be found, among other places, in Figures 1-3 of the originally filed Application.

The inventions of Claims 1 and 9, which have the features detailed above, are unique because the inventions of Claims 1 and 9 address problems associated with conventional extruder knife assemblies. With conventional extruder assemblies, precise alignment is an absolute essential. Because of the precise alignment, setting up extruding machines to operate is very time consuming, oftentimes taking in excess of several hours. This set-up time is very costly to manufacturers due to

the number of man-hours required to perform the set-up and the loss of throughput during the set-up period.

This precise alignment is not required for the inventions of Claims 1 and 9. Because one end of the blade is free-floating and the majority of the length of the blade extends beyond the periphery of the holder, the blade is able to flex along its length. Essentially, the claimed inventions can be pressed against a cutting surface or die plate very quickly without time consuming alignments. When pressed against the cutting surface or die plate, each blade individually conforms to the cutting surface to which it is applied (independent of other blades or the rest of the assembly). Thus, “alignment” with a die plate or cutting surface remains even when the assembly undergoes thermal expansion or the die plate (or cutting surface) becomes distorted or warped.

Hoshi does not teach, disclose, or suggest this combination. In one embodiment, disclosed in Figure 10, Hoshi discloses a “fan” used for extrusion. This “fan” is comprised of a single piece of material (steel) that is machined. One drawback of this type of design is that there is a physical limitation on the ability to machine a part. Essentially, CNC machines are not capable of machining a fan with a very large number of blades. The claimed invention, on the other hand, can allow for a much larger number of blades because CNC machine restrictions are not present.

Another drawback of Hoshi’s design in Figure 10 is that the material must be very machinable. This limitation severely limits the number of materials that can be used. Some examples of material that would not be suitable for the design of Figure 10 might be boron carbide or tungsten carbide. Thus, the most wear resistant material cannot be used in Hoshi’s design depicted

in Figure 10. The claimed invention, though, does not have this problem because the blades can be made of very hard and nearly unmachinable materials so as to be very wear resistant.

In another embodiment shown in Figure 12, Hoshi discloses a hub where blades are inserted into a hub. This configuration, though, does not include a free-floating end for the blades and is not reversible. The claimed invention does have the flexibility and reversibility that Hoshi does not.

Altenburg also does not teach, disclose, or suggest this combination. As can be seen, each embodiment of Altenburg shows the blades as fixed or secured along their entire length to a hub body (18). As with both Weddell and Van Osenbruggen, the blades will rigidly remain in place. This lack of flexibility, again, teaches away from the claimed inventions.

Furthermore, Van Osenbruggen does not teach, disclose, or suggest this combination. Van Osenbruggen, instead, describes a grinding wheel. As with Weddell, this grinding wheel includes teeth, but the teeth do have a length where the majority extends beyond the periphery of the wheel, indicating a lack of blade flexibility. Again, as with Weddell, the teeth will, in fact, rigidly remain in place when placed against a cutting surface (as would be expected with a grinding wheel). This lack of flexibility teaches away from the claimed inventions.

The Examiner has also cited U.S. Patent No. 4,762,111 by Weddell ("Weddell"). Weddell does not teach, disclose, or suggest this combination. To explain, Weddell is a cutting head for a milling machine. This cutting head includes a number of cutting members or cutter bits (11) that are inserted into a holding wheel or body portion (10) such that the cutting characteristics (diameter and cutting depth) can be varied. Weddell does not show cutter bits (11) having a majority of the length

extending beyond the periphery of the body portion (10), indicating a lack of blade flexibility. The cutter bits (11) will, in fact, rigidly remain in place when placed against a cutting surface (as would be expected with a cutting head for a milling machine). This lack of flexibility teaches away from the claimed inventions.

In view of the foregoing, it is apparent that the cited references do not disclose, teach or suggest the unique combination now recited in amended Claims 1 and 9. Applicant therefore submits that amended Claims 1 and 9 are each clearly and precisely distinguishable over the cited references in a patentable sense, and are therefore allowable over these references and the remaining references of record. Accordingly, Applicant respectfully requests that the rejections of Claims 1 and 9 under 35 U.S.C. § 103(a) in view of Hoshi, Altenberg, and Van Osenbruggen be withdrawn and that Claims 1 and 9 be allowed.

Claims 2, 6, 8, 41, and 43 depend on and further limit amended Claim 1. Hence, for at least the aforementioned reasons, these Claims should be deemed to be in condition for allowance.

Claims 10, 14, 16, 42, and 44 depend on and further limit amended Claim 9. Hence, for at least the aforementioned reasons, these Claims should be deemed to be in condition for allowance.

Rejections Under 35 U.S.C. §103(a)

Claims 4 and 12 stand rejected under 35 U.S.C. §103(a) in view of Weddell, Altenberg, Van Osenbruggen, and U.S. Patent No. 5,054,354 to Kubis ("Kubis"). Insofar as they may be applied against the Claims, these rejections are overcome.

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Claim 4 depends on and further limits amended Claim 1. Hence, for at least the aforementioned reasons, this Claim should be deemed to be in condition for allowance.

Claim 12 depends on and further limits amended Claim 9. Hence, for at least the aforementioned reasons, this Claim should be deemed to be in condition for allowance.

Citation of Prior Art

After filing an After Final Response in co-pending divisional application 10/465,422, Applicant's representative noticed that PTO-982 forms were missing in this Application and in co-pending divisional application 10/465,422 (both of which are before the same Examiner). Applicant's representative spoke with the Examiner regarding missing PTO-892 forms in this Application and in co-pending divisional application 10/465,422. The Examiner acknowledged that the forms were omitted in error and that Hoshi and U.S. Patent No. 3,266,090 by Gosney would be cited in PTO-892 in a following action. Applicant would like to thank the Examiner for the courtesies extended.

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Conclusion


Applicant has now made an earnest attempt to place this Application in condition for allowance. For the foregoing reasons and for other reasons clearly apparent, Applicant respectfully requests full allowance of Claims 1, 2, 4, 6, 8-10, 12, 14, 16, and 41-44.

Applicant does not believe that any other fees are due; however, in the event that any fees are due, the Commissioner is hereby authorized to charge any required fees due (other than issue fees), and to credit any overpayment made, in connection with the filing of this paper to Deposit Account 50-2180 of Storm LLP.

Should the Examiner require any further clarification to place this application in condition for allowance, the Examiner is invited to telephone the undersigned at the number listed below.

Respectfully submitted,

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